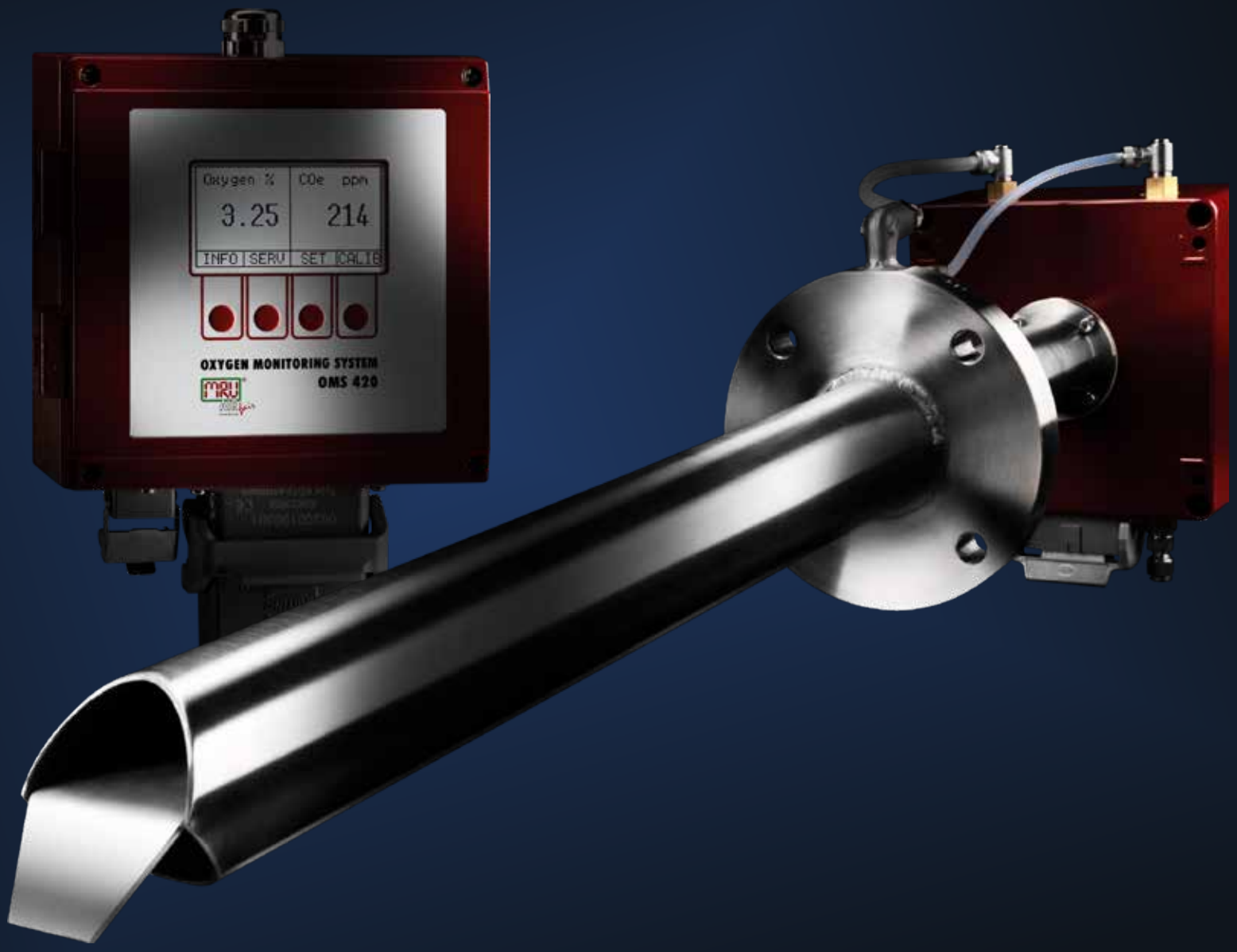
MRU since 1984®
AIR fair
EMISSION MONITORING SYSTEMS

OMS *420*

In-situ real-time analysis of
Oxygen and COe.

O2 | COe Combustion optimization

Reduce costs through combustion optimization



OMS *420*

On site - real-time oxygen and COe analysis

OMS 420 provides continuous combustion optimisation at industrial boilers

- All combustions with combustion temperatures up to max. 3,092 °F (1,700 °C) (see different models)
- Die casting aluminum enclosure with electronics, keyboard, up-front display of O_2 and CO_e*
- Standard DN65 flange with variable probe tube lengths Ø 2.36" (60 mm) and with back-purge-/compressed air connector
- Connecting tube with reference air inlet and small flange, Ø 3.94" (100 mm)
- Rugged industrial plug for power supply and data transfer (analog 4 ... 20 mA, digital RS 485)

Options:

- CO_e measurement
- Compressed air back-purge with control valve complete with electronics, incl. adjustable intervals – recommended for high dust sites
- Automatic calibration for span and offset, using pneumatic unit PU 420
- Application with high temperatures up to approx. 3,092 °F (1,700 °C) with ceramic tube and ejector (model HT)
- Remote control- and display unit max. 32 foot (10 m) (model RT) for applications with high ambient-/radiation temperature > 122 °F (50 °C)

The devices in detail

An overview of different models

OMS 420 compact model

- For use only at clean combustions, ambient to probe head temperature not higher than 140°F (+60 °C)
- Temperature regulated ZrO_2 sensor, transmitter mounted on probe head
- Dual galvanic isolated 4 ... 20 mA analog output and digital output RS 485 (Modbus RTU)
- Power supply: 24 Vdc, 100 W

OMS 420 RT remote transmitter with pneumatic unit PU420 for automatic calibration

- Aluminum housing with corrosion-resistant, red powder coating
- Separate electronics with LCD display and operating keys
- RS 485 interface with Modbus RTU protocol for digital data transfer
- 4 ... 20 mA analog output, RS 485 (Modbus RTU)
- Power supply: 100 ... 240 V, 100 W

OMS 420 HT – high temperature with ceramic probe and ejector

- For use only at all clean and dusty/dirty combustions and 4" ANSI-150 lbs flange
- Probe design with ejector (sample aspiration via air-jet pump)
- Including automatic back-purge with clean and dry compressed air 87 ... 145 psi (6 ... 10 bar)
- Power supply: 100 ... 240 V, 100 W

Service-friendly handling

The OMS 420 transmitter with electronics, display and operating keys as well as the connection tube and the small sensor flange form one unit and are fixed to the probe flange with 4 screws. For service, inspection and repair work simply loosen these 4 screws and replace the complete transmitter within minutes.

OMS *420*

TECHNICAL SPECIFICATIONS

Measurement component		Measuring range	Resolution	Accuracy
O_2	**Oxygen**	0 … 25 Vol. % absolute	0.01 %	**± 0.2** % or ± 5 % of reading*
COe	**Combustibles**	0 … 1,000 ppm	1 ppm	**± 50 ppm or ± 10** % of reading*

General technical data	
Warm-up time	min. 30 min.
Flange	DN65 PN6 flange, Ø 6.3" (160 mm)
Probe tube	12" ... 6.5-foot (300 ... 2,000 mm) Ø 2.36" (60 mm)
Flange temperature	min. 158 ° F ... max. 302 °F (+70 ... max. +150 °C) (condensation moisture must be avoided)
Response time/T90	< 10 sec.
Analog output	2x current loop 4 ... 20 mA, with galvanic isolation linearized for both 0 ... 25.00 % O_2 and 0 ... 1,000 ppm COe (user definable settings in 0.5 % steps are possible)
Digital output	RS 485 (with Modbus protocol, without galvanic isolation)
Power supply	18 ... 24 Vdc (for model OMS 420 compact), 90 ... 100 W 100 ... 240 Vac (for model OMS 420 RT and HT), max. 100 W
Electronics of the transmitter	with local microprocessor, display and 4 push-buttons
Calibration inlet	with test gas fitting for 6/4 mm tube calibration gas supplied manually or automatically via. pneumatic unit PU 420
Back-purge inlet	min. 6 ... 8 bar compressed air with quick connector for 8 mm tube
Ambient temperature of electronics	-4 ... 140 °F (-20 ... +60 °C)
Enclosure Transmitter	die cast aluminum, 6.3" x 6.3" x 2.36" (160 x 160 x 60 mm) and 7.87" (200 mm) probe tube, Ø 1.97" (50 mm)
Protection class	IP65
Weight	approx. 7.7 lbs. (3.5 kg) (without probe and flange)

MRU AIRfair since 1984®
EMISSION MONITORING SYSTEMS

MRU Instruments, Inc.
Humble, TEXAS 77338 USA
Tel.: +1 (832) 230-0155
Info@mru-instruments.com
www.mru-instruments.com

MRU Representative: